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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,870	11/30/2000	Kenichi Kato	P/1139-97	1956

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OSTROLENK FABER GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 100368403

EXAMINER

PHAN, MAN U

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 05/14/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/726,870

Applicant(s)

KATO, KENICHI

Examiner

Man Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 13 is/are rejected.
- 7) ☒ Claim(s) 5-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2,3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The application of Kato for a "Mobile communication system and method of controlling synchronization between base stations" filed 11/30/2000 has been examined. Claims 1-13 are pending in the application.

#### *Priority*

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 11/30/1999. It is noted, however, that applicant has not filed a certified copy of the JAPAN 11-340044 application as required by 35 U.S.C. 119(b).

#### *Claim Rejections - 35 USC ' 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

In claim1, lines 13-14 which recite "a radio communication timing of all of said base stations for each base station on the basis of delay time detected" is not clear as to whether it is reciting -timing of radio communication of all the base stations on the basis of delay time detected for each of said base stations—as in claim 13, lines 14-15.

Claims 1 and 13 recites the limitation "the exchange control" on lines 5 & 6 respectively. There is insufficient antecedent basis for this limitations in the claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley, III et al. (US#6,151,311) in view of Hirata (US#5,920,557).

With respect to claims 1, 3 and 13, both Wheatley, III et al. (US#6,151,311) and Hirata (US#5,920,557) disclose a novel method and system for controlling synchronization between base stations in TDMA cellular communication system, according to the essential features of the claims. Wheatley, III discloses a novel and improved method and apparatus for synchronizing a base station by means of signals transmitted from a mobile station which is concurrently in communication with a synchronized base station. The slave base station attains synchronization with the reference base station through messages transmitted from and received by a mobile station in the soft handoff region between the reference base station and the slave base station. First, the round trip delay between the mobile station and the reference base station is measured by the reference base station (*delay detecting for synchronizing*). Once the mobile station

acquires the signal from the slave base station, it measures and reports the difference between the amount of time it takes a signal to travel from the reference base station to it and the amount of time it takes a signal to travel from the slave base station to it. The last measurement necessary is a measurement by the slave base station of the time difference between the time it received the reverse link signal from the mobile and station the time it transmitted a signal to the mobile station. A series of computations described in detail herein are performed upon the measured time values to determine the time difference between the slave base station and an adjustment of the slave base station timing is performed in accordance therewith. (See Fig. 3; Col. 4, lines 11 plus; and Col. 11, lines 62 plus). In the same field of endeavor, Hirata (US#5,920,557) discloses in Fig. 2 a block diagram illustrated a radio base station inter-station synchronizing circuit in a TDMA digital mobile communication system, in which data reception/comparison circuit 4 that outputs data match signal S9 when synchronizing signal data transmitted from a synchronized timing control station provided in a mobile communication system match with the same synchronizing signal data held by that radio base station; delay time correction counter 5 that, upon receiving the data match signal S9, subtracts from the timing of the received synchronizing signal data line delay time from the synchronized timing control station to that radio base station; timing holding circuit 8 that holds the corrected synchronized timing; and frame timing generation circuit 9 that generates and outputs frame timing from the output pulse of the timing holding circuit 8 (Col. 2; lines 12 plus).

One skilled in the art would have recognized the need for effectively and efficiently controlling synchronization between base stations utilizing timing adjustment processor, and would have applied Hirata's teaching of the base station inter-station synchronizing circuit into

Wheatley's novel use of time synchronizing a slave base station with a reference base station. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Hirata's radio base station inter-station synchronizing circuit into Wheatley's mobile station assisted timing synchronization in a CDMA communication system with the motivation being to provide a method and system for controlling synchronization between base stations.

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley, III et al. (US#6,151,311) in view of Hirata (US#5,920,557) as applied to the claims above, and further in view of Brydon et al. (US#5,483,677).

With respect to claims 2 and 4, Wheatley and Hirata disclose the claimed limitations discussed in paragraph 5 above. However, these claims differ from the claims above in that the claims require for generating a test signal for delay time detection in performing synchronization between base stations. In the same field of endeavor, Brydon et al. (US#5,483,677) provides a radio system comprising: a central source of signals for transmission; a plurality of radio transmitters, each connected to the central source by a digital data transfer link each having a respective transfer delay; means for injecting into a channel of a transfer link a test signal at intended predetermined times (*generating a test signal for delay time detection*), means for determining the travel time of the test signal over a link by establishing the difference between arrival time and the intended predetermined time of transmission, and means for adjusting the transfer delay to at least one of the transmitters to equalize the transfer delays to the transmitters, so that signals from the central source can be transmitted from the transmitters substantially in

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time synchronism, characterized in that there is correction means for measuring a transmit delay between the intended predetermined transmission time and the actual time of transmission of the test signal, and for sending the length of the transmit delay over the transfer link, so that the adjustment of transfer delay can be corrected to take account of the transmit delay (Col. 2; lines 23 plus).

One skilled in the art would have recognized the need for effectively and efficiently controlling synchronization between base stations utilizing timing adjustment processor, and would have applied Brydon's delay equalizer utilizing the test signal for synchronization, and Hirata's teaching of the base station inter-station synchronizing circuit into Wheatley's novel use of time synchronizing a slave base station with a reference base station. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Brydon's radio system with measurement and adjustment of transfer delay, and Hirata's radio base station inter-station synchronizing circuit into Wheatley's mobile station assisted timing synchronization in a CDMA communication system with the motivation being to provide a method and system for controlling synchronization between base stations.

***Allowable Subject Matter***

7. Claims 5-12 are objected to as being dependent upon the rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

8. The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the system comprises switching means for selectively switching an operating conditions thereof to normal and test operating condition, and makes the delay time detection means operate when the system is in a test operation mode, as recited in claims 5-8; wherein the system executes the test operation mode when operating the system for the first time and/or terminating a maintenance operation including additional installation of base stations, as specifically recited in claims 9-12.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Bloem et al. (US#6,560,215) is cited to show the method and apparatus for updating a timing offset in a communication device.

The Hara (US#6,477,385) is cited to show the mobile communication system and method for establishing synchronization in mobile communications.

The Wallace et al. (US#6,590,881) is cited to show the method and apparatus for providing wireless communication system synchronization.



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The Koro et al. (US#6,031,828) is cited to show the radio communication system.

The Strzelec et al. (US#6,320,507) is cited to show the method for synchronization between systems.

The Nakahara et al. (US#5,379,326) is cited to show the synchronization control circuit for TDMA cellular communication system.

The Griffith et al. (US#5,388,102) is cited to show the arrangement for synchronizing a plurality of base stations.

The Gerszberg et al. (US#5,528,597) is cited to show the autonomous synchronization of base stations in a digital wireless radio telephone network.

The Carney et al. (US#5,940,384) is cited to show wideband wireless base station making use of TDMA bus having selectable number of time slots and frame synchronization to support different modulation standards.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (703)305-1029.

The examiner can normally be reached on Mon - Fri from 6:30 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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**12. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

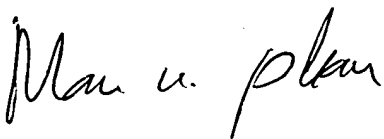
**or faxed to:** (703) 305-9051, (for formal communications intended for entry)

**Or:** (703) 305-3988 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Mphan

05/13/2004.



**MAN PHAN  
PATENT EXAMINER**